

ABSTRACT OF THE DISCLOSURE

A reconfigurable modular microfluidic system, providing a microfluidic breadboard platform for the formation of fluidic network and fluidic sealing upon a system assembly. Modular microfluidic elements or “chips” are arranged on a precisely machined alignment base to form a fluidic network, with fluid connections provided directly from chip-to-chip at overlapping corners. Fluidic access to external devices is possible at every fluid connection and through special ingress/egress chips. By maintaining a largely planar layout, optical access is provided for detecting or visualization for every chip. The assembly may be covered by a perforated cover plate.